BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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Order Instituting Rulemaking Regarding Policies, Procedures and Rules for Development of Distribution Resources Plans Pursuant to Public Utilities Code Section 769.	Rulemaking 14-08-013 (Filed August 14, 2014)

REPLY OF SAN DIEGO GAS & ELECTRIC COMPANY (U 902-E) TO PARTIES' RESPONSES TO QUESTIONS POSED IN ORDER INSTITUTING RULEMAKING AND COMMENTS ADDRESSING SCOPE

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I. INTRODUCTION

The California Public Utilities Commission ("CPUC" or "Commission") issued an *Order Instituting Rulemaking Regarding Policies, Procedures and Rules for Development of Distribution Resources Plans Pursuant to Public Utilities Code Section 769* ("DRP OIR") on August 14, 2014. This rulemaking ("R.14-08-013") was opened to establish policies, procedures, and rules to guide California investor-owned electric utilities ("IOUs") in developing Distribution Resources Plan ("DRP") proposals to be filed by July 1, 2015, as required by Assembly Bill ("AB") 327, subsequently enacted, in part, as Public Utilities Code ("P.U. Code") §769. Pursuant to AB 327, the IOUs' DRPs must include methodologies to define locational benefits and optimal locations for Distributed Energy Resources ("DERs"), augmented or new tariffs and programs to support efficient DER deployment, and the removal of specific barriers to deployment of DERs. The Commission will consider additional spending to integrate cost-effective distributed resources into its plans.[1] Accordingly, the DRP OIR will evaluate the IOUs' existing and future electric distribution infrastructure and planning procedures as it pertains to incorporating DERs into the planning and operation of the utilities' electric distribution systems.

[1] Section 769 (d).

The DRP OIR posed a number of specific questions and instructed the investor-owned utilities ("IOUs") to file answers to the questions and provide any comments as to the scope of the proceeding. San Diego Gas & Electric Company ("SDG&E") submitted a response on September 5, 2014, along with 33 other interested parties. Per the Commission's initial guidance, SDG&E submits its reply to a portion of parties' initial comments, specifically to address: physical assurance, scope, rate reform, reliability, data security, and cost control.

II. SDG&E'S REPLIES ADDRESSING SCOPE

The issues raised by parties in opening comments overlap issues being addressed in other open proceedings, such as those related to Resource Adequacy ("RA"), the Long Term Procurement Plan ("LTPP"), Joint Reliability Plan, Net Energy Metering ("NEM") successor tariffs, Distribution Interconnection OIR, Demand Response, and Renewable Portfolio Standards ("RPS"), to name a few. Wal-Mart and Sam's West ("Walmart") specifically brought up potential avoided costs of local RA resources[2]. The Alliance for Retail Energy Markets ("AReM") notes the overlap of issues related to increases in distributed generation being reflected in both the LTPP and RA proceedings and requests that the Commission issue some guidance on how and at what stages these proceedings will be inter-related[3]. SolarCity believes metrics in the DRP should include multiple considerations, including avoided cost of energy, Greenhouse Gas ("GHG"), Renewable Energy Credits ("RECs") and RA capacity[4]. Interstate Renewable Energy Council ("IREC") believes that it may be necessary to revisit California's ratemaking framework to achieve the broader vision articulated in Section 769. In order to incorporate DERs, IREC contends, the IOUs' cost-recovery and profit incentives should be

[2] Walmart's September 5, 2014 Response to Order Instituting Rulemaking, page 5.
[3] AReM's September 5, 2014 Comments on Order Instituting Rulemaking, pages 1-2.
[4] SolarCity's September 5, 2014 Comments on the Order Instituting Rulemaking, page 6.

better aligned with California's policy goals[5]. IREC further suggests that the Commission coordinate development and review of the DRPs with other proceedings at the Commission, including the NEM successor tariff, California Solar Initiative, Self-Generation Incentive Program and other distributed generation issues, residential rate structures, and DG Interconnection.[6]

While not part of this proceeding, rate reform is key to accomplishing much of what is envisioned in this OIR. As pointed out by IREC and others, "…the current ratemaking paradigm represents a fundamental challenge to the successful integration of DER into distribution system planning."[7] SDG&E could not agree more. Without comprehensive rate reform, including time of use and real time elements, it will be difficult to realize the Commission's vision of a fully integrated DER network. While rate reform is outside the scope of this proceeding, the Commission should recognize the relationship between the two proceedings by deferring consideration of more sweeping proposals in this proceeding until rate reform is complete. Attempting to force a DER paradigm without the tools, both monetary and planning, to enable success will result in an incomplete result at best, and potentially exacerbate operational issues that already exist.

Several parties, Walmart and IREC among them, call for the IOUs to identify "e*nvironmental and societal benefits*" or "*non-energy benefits*" as part of their DRPs. While these goals are laudable, these are being addressed elsewhere (energy efficiency proceedings, demand response, and net energy metering) and will distract from the main purpose of this proceeding.

[5] IREC's September 5, 2014 Comments on the Order Instituting Rulemaking page 20.
[6] IREC's September 5, 2014 Comments on the Order Instituting Rulemaking page 3.
[7] IREC's September 5, 2014 Comments on the Order Instituting Rulemaking page 20.

The scope of this OIR should be focused on what is achievable in the time allotted to the IOUs, and set the stage for broader changes later. Attempting too much may result in DRPs that achieve little to nothing in the short term. As the DRPs are updated and expanded, the wider and more complicated system changes can be addressed.

III. SDG&E'S REPLIES ADDRESSING GENERAL COMMENTS

As stated in initial comments, and to concur with the other utilities, the OIR should facilitate the integration of DERs at optimal locations when considering safety, reliability, costs and benefits. SDG&E supports the concept of "open access" for all types of DER and seeks to enable seamless integration of DERs while providing safe and reliable electric service across the distribution systems. SDG&E believes that the OIR should leverage the institutional knowledge of the IOUs to develop a rigorous framework for the analysis and implementation of DER throughout the distribution system. The IOUs have a century of experience at providing safe and reliable low cost power, and our expertise in this area can and should be instrumental in developing the most effective path to full DER integration. Utility experience should be viewed as an asset to the Commission and DER community in this proceeding, and not an obstacle to be overcome. Further, SDG&E agrees with the California Independent System Operator ("CAISO")'s comments that specific aspects of DER expansion will affect core CAISO functions and responsibilities. In this proceeding, it is important to coordinate between the distribution and transmission systems to maintain reliability and safety given the expected energy variability.[8]

[8] CAISO's September 5, 2014 Comments on DRPs Pursuant to R.14-08-013 page 1.

IV. REPLIES ON KEY ISSUES

A. Physical Assurance for Capacity and Reliability Remains a Key Concern

Throughout initial comments raised by all parties is an underlying assumption that DERs will, by their very nature, improve distribution reliability. Unfortunately, what is not addressed is what SDG&E believes to the number one issue frustrating the widespread adoption of DERs to achieve this objective: physical assurance. California Solar Energy Industries Association ("CALSEIA") reflects this assumption when it states, "When the sun is shining, customer-sited solar systems can be counted on to produce electricity."[9] This is true, but only to a point. CALSEIA's assertion appears to reflect an unstated assumption that peak circuit load peak and peak solar output coincide, which in SDG&E's experience is rarely the case. SDG&E is currently evaluating coincidence factors for solar generation and distribution load, and finding that in almost all cases, the output at circuit load peak is either severely diminished or in the case of evening-peaking residential circuits, non-existent. Additionally, from a reliability perspective, when an outage occurs DER may cease to operate and be unable to contribute to circuit reliability. Inverter based DER will not operate after an outage until the distribution system is in a stable condition, which precludes the DER from participating in system restoration.

Second, even on those rare circuits where PV generation tends to follow the load trend, partly cloudy days can create serious operational challenges on distribution circuits with large power swings. CALSEIA's solution to this problem is demand response mechanisms to counteract the effects of cloudy weather. There are challenges associated with utilizing demand response in this manner. Demand response programs currently address system issues with a limited number of calls of a fixed duration in a calendar year. Proposals to address ramping

[9] CALSEIA's September 5, 2014 Comments on The Order Instituting Rulemaking, page 5.

issues are currently being explored. However, if the idea is to call demand response on a real-time basis, rapidly controlling customer load, both on and off, on a circuit as required due to cloud cover, that is an unreasonable expectation of our customers at present, other than the customer with the solar generation whose power output can be modulated. Solar paired with other onsite DER could provide a solution so that other utility customers have a reasonable expectation that their load will be served in a consistent manner, and not subject to the whims of clouds, but that has yet to be proposed. This also raises issues of equality of service, i.e. whether some customers on one circuit should be subject to curtailment due to high DER intermittency when others on a circuit in the same area are not.

Some may suggest that the answer to some of these issues is energy storage. Unfortunately, there is not enough experience (on all sides) established with the operating characteristics of storage devices. For storage tied with DERs to displace traditional projects for capacity and reliability services, there must be some form of assurance given that the DERs are held accountable, otherwise reliability will suffer. Likewise, having to add storage to firm up other DERs, will drive up the costs. It seems unlikely that having to add two DER devices will emerge as the low cost solution.

B. Interconnections in Optimal Locations Will Not Be Zero Cost

SDG&E believes that employing the correct methodology when identifying optimal locations will go far in promoting DER integration. SDG&E agrees with the "right size, right time, right location, right certainty" criteria for DER as identified by ORA and endorsed by the Commission in D.03-02-068. A location on a map or diagram is of little value if a proposed DER does not meet the other criteria. A too large generator in an otherwise optimal location will trigger costly distribution upgrades. A too small DER may not provide the capacity necessary to

defer or avoid distribution upgrades identified in the planning process. Similarly, a DER that is not in service in time to address a capacity deficiency also will not provide the resource necessary for deferment. While SDG&E agrees with many parties (including IREC, TURN, ORA, and others) that DERs have the potential to defer capacity upgrades, the "right" criteria must be met first. Only after the "right" criteria are met can a DER connect *cost effectively*, which should not be construed as cost-free.

Initial comments often refer to Optimal Locations as places where DERs can connect for little to no cost, at places that "*…don't require grid upgrades…[or] match the load profile of the feeder*…".[10] But Optimal Locations, as identified in the DRPs, will not be free of costs. Each interconnection requires a minimum level of infrastructure to maintain safety and reliability of the distribution system, such as control and communication systems, which become part of the integration costs. In SDG&E's experience, some DER applicants that drop out of the interconnection process point to the cost of interconnection facilities as a reason, even where the facility requirements have been minimal in scope (e.g. a switch and distribution extension to the applicant's facilities). Further, it may be that electrical needs do not coincide with the ability to site a project profitably above and beyond interconnection; the IOUs have no control over external costs such as land and permitting. Therefore, the identification of optimal locations will not relieve DERs of their obligations to finding cost-justifiable sites and paying for the cost to interconnect in a safe and reliable manner.

C. DERs Should be Held to Same Standards as IOUs re: Reliability.

Another theme found in some of the parties' initial comments is an assumption that DERs will, by their very nature improve distribution reliability. Solar City even goes so far as to state

[10] Clean Coalition's September 5, 2014 Responses to Order Instituting Rulemaking Regarding Policies, Procedures, and Rules for Development of Distributed Resources Plans, page 6.

that DER should be given credit for improving reliability indices such as System Average Interruption Duration Index ("SAIDI") and System Average Interruption Frequency Index ("SAIFI").[11] It is questionable on its surface whether DERs can significantly improve grid reliability indices without that being a goal of the DER design including integration into utility operations. Much of the IOUs' ability to lower these indices is because of resources that DERs do not have: control and protection systems, as well as field personnel to prevent and restore outages in a timely fashion. Without these resources, DER will not be in a position to prevent outages (affecting SAIFI) or restore outages quickly (affecting SAIDI). It is difficult to see how the DER should garner the benefits of SAIDI and SAIFI reduction without the means to measurably affect those indices. Notably, Solar City does not offer that DERs should also share in the penalties associated with decreases in those same indices if a DER was unable to perform those services as promised.

DERs should be given the opportunity to provide services for which they may be suited for: capital project deferrals. To give credit to DERs for services that they do not provide is unreasonable and disadvantageous to customers who pay for those services.

D. Data Security Both From and to the IOUs Should be a Top Priority

Repeatedly in initial comments parties call for a "fully transparent process", which includes all data associated with the distribution planning process. Walmart appears to take this concept the furthest: *"…Walmart recommends that the IOUs be required to identify and describe in their DRPs the various subcomponents of their respective distribution systems—i.e., the subsystems that make up each IOU's composite distribution system--by name, location, area covered, operational characteristics and any other details…".*[12]

[11] SolarCity's September 5, 2014 Comments on the Order Instituting Rulemaking, page 7.
[12] Walmart's September 5, 2014 Response to Order Instituting Rulemaking, page 3.

SDG&E is concerned that making public the level of detail that Walmart envisions would compromise the security and reliability of the distribution system. This level of detail would enable any number of bad actors to locate and disable key components of the distribution and transmission systems. Recent events at PG&E facilities underscore the need to protect the physical integrity of the electric system. The drive for transparency must not result in compromising the very network this proceeding is striving to improve. Further, data transparency goes both ways, and should impose a requirement on the DER to provide production data, to which the IOUs currently do not have access.

Cyber security is an area that requires the Commission's attention as part of this proceeding. DERs may be located throughout the electric system, often in host sites that are not secure. As the Distribution System Operator will require communication with each DER for optimal system operation, therein lays a vulnerability that can be exploited if not carefully guarded against.

Customer confidentiality is another key aspect of data security that needs to be carefully considered in this proceeding. IREC, for instance, calls for the Commission and IOUs to *"…consider whether the IOUs are providing adequate access to customer usage data to allow DER providers to offer products and services…"*.[13] The IOUs take their responsibility for customer privacy very seriously, and care should be taken not to undermine that effort. The Commission studied the complex issues of access to energy data and customer privacy in Phase III of the Smart Grid Proceeding (R.08-12-009) and issued D.14-05-016, which adopted a framework to provide third parties access to energy usage data while maintain customer privacy.

[13] IREC's September 5, 2014 Comments on the Order Instituting Rulemaking page 15.

The Commission should not re-litigate those issues in this proceeding and should ensure that any data requirements comply with the provisions of D.14-05-016 to ensure orderly access to data and customer privacy.

V. CONCLUSION

SDG&E appreciates the opportunity to provide the foregoing reply comments.

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Respectfully submitted,

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